

CHEMISTRY

BOOKS - ARIHANT PUBLICATION

CARBOXYLIC ACIDS

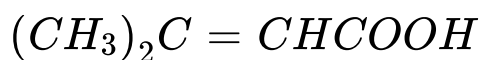
Sample Question

1. Give the IUPAC names of the following compounds.



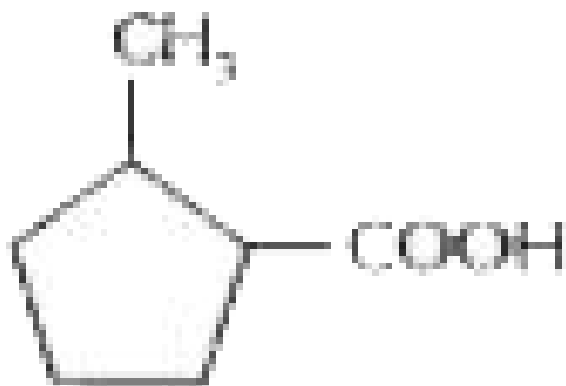
Watch Video Solution

2. Give the IUPAC names of the following compounds.



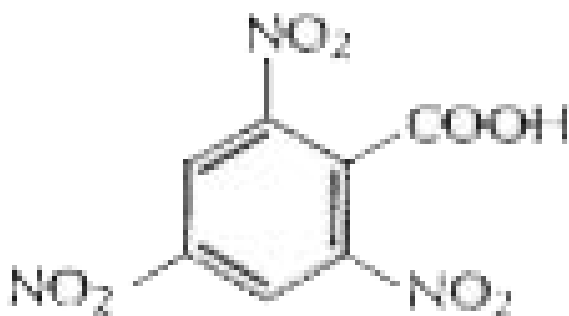
 [Watch Video Solution](#)

3. Give the IUPAC names of the following compounds.



 [Watch Video Solution](#)

4. Give the IUPAC names of the following compounds.



 [Watch Video Solution](#)

5. Show how each of the following compounds can be converted to benzoic acid?

Ethyl benzene



Watch Video Solution

6. Show how each of the following compounds can be converted to benzoic acid?

Acetophenone



Watch Video Solution

7. Show how each of the following compounds can be converted to benzoic acid?

Bromobenzene



 [Watch Video Solution](#)

8. Show how each of the following compounds can be converted to benzoic acid?

Phenylethene (styrene)

 [Watch Video Solution](#)

Part I Questions For Practice Mcq

1. Common name of carboxylic acid, which is found in butter is

A. capric acid

B. valeric acid

C. stearic acid

D. butyric acid

Answer: D



Watch Video Solution

2. Alkaline hydrolysis of an ester is called

A. neutralisation

B. esterification

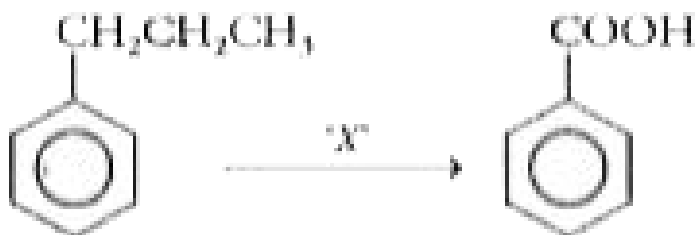
C. polymerisation

D. saponification

Answer: D

 [Watch Video Solution](#)

3. Consider the following reaction



Compound 'X' in the given reaction is

A. Alk. KMnO_4

B. $K_2Cr_2O_7 / H_2SO_4$

C. $CrO_3 / 40\% H_2SO_4$

D. All of these

Answer: A



[Watch Video Solution](#)

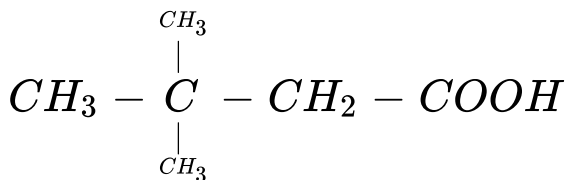
Part I Questions For Practice Very Short Answer Type Questions

1. What is vinegar?



[Watch Video Solution](#)

2. Name the following compound in IUPAC system.



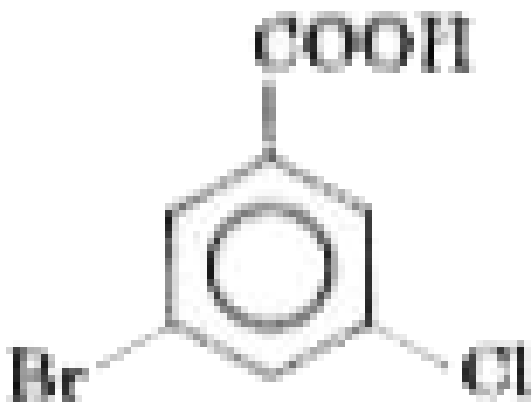
Watch Video Solution

3. Write the structural formula of Benzoic acid .



Watch Video Solution

4. Write the IUPAC name of



[▶ Watch Video Solution](#)

5. Which is the functional isomer of monocarboxylic acid?

[▶ Watch Video Solution](#)

6. Oxidation of ethyl benzene with alkaline $KMnO_4$ gives



[Watch Video Solution](#)

Part I Questions For Practice Short Answer Type I Questions

1. Do the conversation: Formic acid to acetic acid



[Watch Video Solution](#)

2. How can benzoic acid be prepared from benzene using Grignard's reagent?



[Watch Video Solution](#)

Part I Questions For Practice Short Answer Type II Questions

1. An organic compound A (molecular formula $C_8H_{16}O_2$) was hydrolysed with dilute sulphuric acid to give a carboxylic acid B and an alcohol C. Oxidation of C with chromic acid also produced B.

On dehydration C gives but-1-ene. Write the equations for the reactions involved.

 [Watch Video Solution](#)

2. Two moles of an organic compound A on treatment with a strong base gives two compounds B and C. Compound B on dehydrogenation with Cu gives A, while acidification of C yields carboxylic acid D with molecular formula of CH_2O_2 . Identify the compounds A, B, C and D and write all the chemical reactions involved.

 [Watch Video Solution](#)

3. Show the preparation of benzoic acid from toluene



[Watch Video Solution](#)

4. Show the preparation of benzoic acid from carboxylation of Grignard's reagent with equation.



[Watch Video Solution](#)

5. How do you prepare benzoic acid from n-propyl benzene



[Watch Video Solution](#)



[Watch Video Solution](#)

6. How do you prepare benzoic acid from phenylcyanide



[Watch Video Solution](#)

7. How can you get benzoic acid from benzene?



[Watch Video Solution](#)

Part I Questions For Practice Long Answer Type Questions

1. How will you prepare the following compounds from benzene? You may use any inorganic reagent and any organic reagent having not more than one carbon atom.



[View Text Solution](#)

2. How will you prepare the following compounds from benzene? You may use any inorganic reagent and any organic reagent having not more than one carbon atom.



[View Text Solution](#)

3. How will you prepare the following compounds from benzene? You may use any inorganic reagent and any organic reagent having not more than one carbon atom.



[View Text Solution](#)

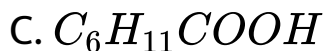
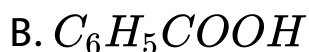
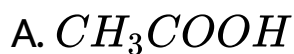
4. How will you prepare the following compounds from benzene? You may use any inorganic reagent and any organic reagent having not more than one carbon atom.



[View Text Solution](#)

Part I Questions For Assessment Mcq

1. Which of the following acids cannot be prepared by Grignard reagent?

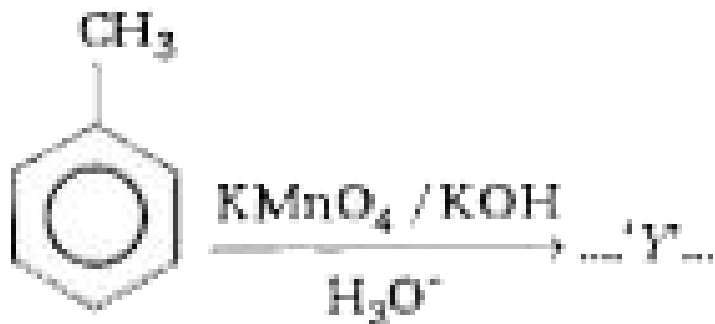


Answer: D



Watch Video Solution

2. Consider the following reaction



Product 'Y' in the reaction is

- A. benzene
- B. benzoic acid
- C. bromobenzene
- D. phenol

Answer: B



Watch Video Solution

Part I Questions For Assessment Very Short Answer Type Questions

1. Write the IUPAC and common name of



[Watch Video Solution](#)

2. Draw the structural formula of hex-2-en-4-ynoic acid.



[Watch Video Solution](#)

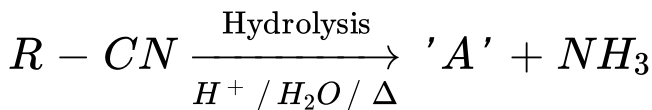
3. Name an oxidising agent that can be used to oxidise alkenes to carboxylic acid.



[Watch Video Solution](#)

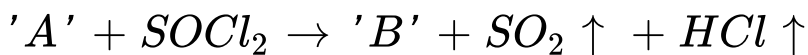
Part I Questions For Assessment Short Answer Type I Questions

1. In the following reactions, identify the compounds A and B.



 [Watch Video Solution](#)

2. In the following reactions, identify the compounds A and B.



 [Watch Video Solution](#)

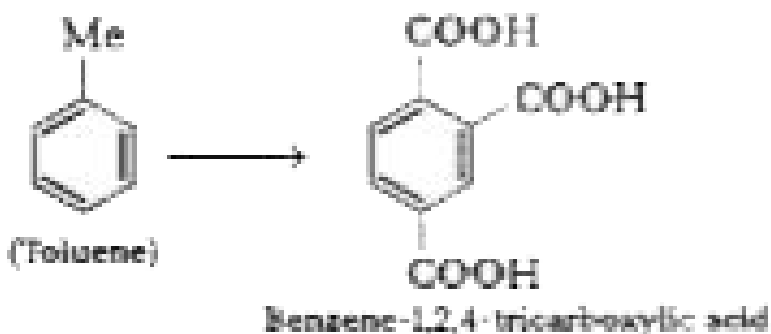
Part I Questions For Assessment Short Answer Type II Questions

1. How will you bring out the following conversions?



 [Watch Video Solution](#)

2. How will you bring out the following conversions?



 Watch Video Solution

Part I Questions For Assessment Long Answer Type Questions

1. Complete the following reactions:



 Watch Video Solution

2. Complete the following reactions:



Watch Video Solution

3. Complete the following reactions:



Watch Video Solution

1. Carboxylic acids are stronger acids due to

A. formation of carboxylate ion

B. high value of degree of ionisation

C. presence of H-bonding

D. formation of carboxylate ion stabilised by
resonance

Answer: A



Watch Video Solution

2. The correct order of acidic strength is



Answer: C



Watch Video Solution

3. Which of the following reagents produces pure acid-chloride from monocarboxylic acid ?

A. PCl_3

B. PCl_5

C. SO_2Cl_2

D. $SOCl_2$

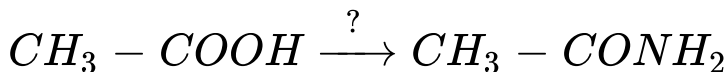
Answer: B



Watch Video Solution

Part II Questions For Practice Very Short Answer Type Questions

1. Write the reagents required in the following reaction:



[Watch Video Solution](#)

2. How can you convert acetic acid to methyl amine?



[Watch Video Solution](#)

3. What happens when sodium salt of acetic acid is heated with soda lime?



[Watch Video Solution](#)



[Watch Video Solution](#)

4. How will you convert benzoic acid to benzene?



[Watch Video Solution](#)

5. Calcium formate on dry distillation yields

_____.



[Watch Video Solution](#)

6. What happens when propionic acid is treated with thionyl chloride?



[Watch Video Solution](#)

7. Formic acid when heated with Tollen's reagent produces _____.



[Watch Video Solution](#)

8. Write the chemical test to distinguish between formic acid and acetic acid.



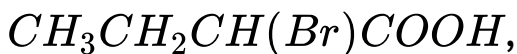
[Watch Video Solution](#)

Part II Questions For Practice Short Answer Type I Questions

1. How is benzoic acid converted to benzaldehyde?

 [Watch Video Solution](#)

2. Arrange the following compounds in the increasing order of their property as indicated.



 [Watch Video Solution](#)

3. Arrange the following compounds in the increasing order of their property as indicated.

Benzoic acid, 4-nitrobenzoic acid, 3,4-dinitro benzoic acid, 4-methoxy benzoic acid (acidic strength).

Presence of electron withdrawing group (EWG) makes an acid more acidic. As the distance between EWG and $-COOH$ group increases, acidity decreases.

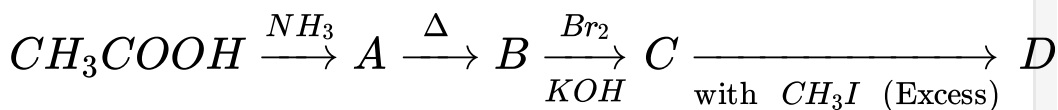


[Watch Video Solution](#)

4. Carboxylic acids contain carbonyl group but do not show the nucleophilic addition reaction like aldehydes or ketones. Why?

 [Watch Video Solution](#)

5. Identify A, B, C and D.



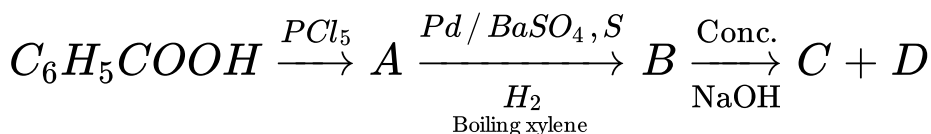
 [Watch Video Solution](#)

6. Compound A was prepared by the oxidation of compound B with alkaline $KMnO_4$. Compound A on reduction with lithium aluminium hydride gets converted back to compound B. When compound A is heated with compound B in the presence of H_2SO_4 , it produces fruity smell of compound C. To which family, the compounds A, B and C belongs to?



Watch Video Solution

7. Identify A, B, C and D



Watch Video Solution

 [Watch Video Solution](#)

8. Give the simple chemical tests to distinguish between the following pairs of compounds.

Phenol and benzoic acid

 [Watch Video Solution](#)

9. Give the simple chemical tests to distinguish between the following pairs of compounds.

Benzoic acid and ethyl benzoate

 [Watch Video Solution](#)

Part II Questions For Practice Short Answer Type II Questions

1. Write the structural formulae of the three derivatives of monocarboxylic acid. Identify the functional group present in them.



Watch Video Solution

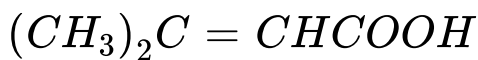
Part II Questions For Practice Long Answer Type Question

1. Give the IUPAC name of the following compounds.

(a)



(b)



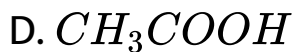
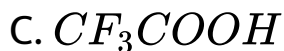
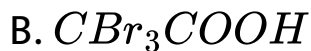
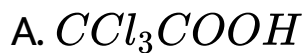
 [Watch Video Solution](#)

2. Although phenoxide ion has more number of resonating structures than carboxylate ion, carboxylic acid is a stronger acid than phenol. Why?

 [Watch Video Solution](#)

Part II Questions For Assessment Mcq

1. Among the following, the strongest acid is



Answer: C



Watch Video Solution

2. Reaction of carboxylic acid in presence of red phosphorus and bromine is known as

A. HVZ reaction

B. Koch reaction

C. Decarboxylation

D. Arndt-Eistert reaction

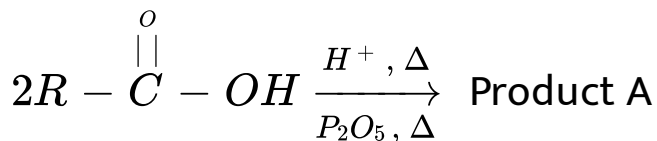
Answer: A



Watch Video Solution

Part II Questions For Assessment Very Short Answer Type Questions

1. Consider the following reaction,



Identify the product A.



[Watch Video Solution](#)

Part II Questions For Assessment Short Answer Type I Question

1. Why cannot HCl be used for the conversion of RCOOH to RCOCl?



[Watch Video Solution](#)

2. Convert the following:

(a) Acetylene to acetic acid

(b) Toluene to m-nitrobenzoic acid



Watch Video Solution

Part II Questions For Assessment Short Answer Type II Question

1. o-nitrobenzoic acid ($pK_a = 2.21$) is stronger acid than 3, 5-dinitrobenzoic acid ($pK_a = 2.80$) but weaker than 2,4-dinitrobenzoic acid in water.



Watch Video Solution

2. Benzoic acid is a stronger acid than phenol.



Watch Video Solution

Part II Questions For Assessment Long Answer Type Question

1. An organic compound $A(C_5H_8O_3)$ on heating with soda lime gives B which reacts with HCN to give C. The compound C reacts with thionyl chloride to produce D which on reaction with KCN gives a compound E. Alkaline hydrolysis of E gives a salt F

which on heating with soda lime produces n-butane. Careful oxidation of A with dichromate gives acetic acid and malonic acid. Give the structures from A to F with proper reason.



[Watch Video Solution](#)

Odisha Bureau S Textbook Solutions A Multiple Choice Type Question

1. The oils from which soaps are prepared belong to a class of compounds known as

A. amine

B. acid

C. hydrocarbon

D. ester

Answer: D



Watch Video Solution

2. Formic acid and acetic acid can be distinguished with -

A. Sodium

B. Dilute acidified $KMnO_4$

C. 2, 4-dinitrophenyl hydrazine

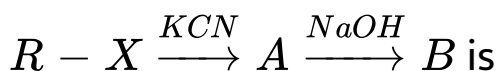
D. Sodium ethoxide

Answer: B



Watch Video Solution

3. The end product in the sequence of reaction



A. an alkane

B. a carboxylic acid

C. sodium salt of carboxylic acid

D. saponification

Answer: C



Watch Video Solution

4. Which of the following reduces $HgCl_2$ to Hg_2Cl_2 ?

A. Formic acid

B. Ammonia

C. Acetic acid

D. CCl_4

Answer: A



Watch Video Solution

5. Acetic acid can be halogenated in presence of red P and halogen, but formic acid cannot be halogenated in the same way due to

- A. presence of α -hydrogen atom in acetic acid
- B. presence of $-COOH$ group in formic acid
- C. presence of carbonyl group in acetic acid
- D. None of the above

Answer: A



Watch Video Solution

6. Among acetic acid, phenol and n-hexanol, which of the compound reacts with $NaHCO_3$ solution to give sodium salt and carbon dioxide?

- A. Acetic acid
- B. n-hexanol
- C. Acetic acid and phenol
- D. phenol

Answer: A



Watch Video Solution

7. Vinegar contains

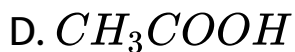
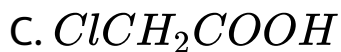
- A. 10 to 20% acetic acid
- B. 10% acetic acid
- C. 6 to 10% acetic acid
- D. 100% acetic acid

Answer: C



Watch Video Solution

8. Which acid is strongest?



Answer: A



Watch Video Solution

9. The acids which do not contain -COOH group are:

Ethanoic acid

Picric acid

Lactic acid

Palmitic acid

p-toluene sulphonic acid.

A. ethanoic acid

B. picric acid

C. lactic acid

D. palmitic acid

Answer: B



Watch Video Solution

10. Which of the following cannot reduce Fehling's solution?

A. Formic acid

B. Acetic acid

C. Formaldehyde

D. Acetaldehyde

Answer: B



Watch Video Solution

11. When benzoic acid is reacted with $LiAlH_4$, it forms

A. Benzene

B. Benzaldehyde

C. Toluene

D. Benzyl alcohol

Answer: B

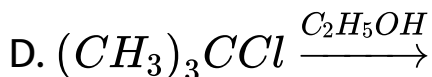
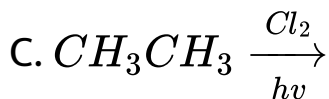
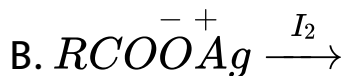
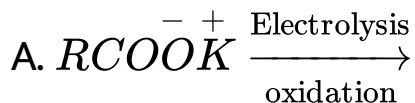


Watch Video Solution

12. Electrolysis of sodium salt of maleic acid to ethyne is known as

 [Watch Video Solution](#)

13. Which of the following reactions is expected to readily give a hydrocarbon product in good yield?



Answer: A



Watch Video Solution

14. Monocarboxylic acids are the functional isomer of

-

A. esters

B. alcohols

C. ethers

D. aldehydes

Answer: A



[Watch Video Solution](#)

15. The boiling point of acetic acid is higher than expected from its molecular weight, because of

- A. solubility in water
- B. non-polar character
- C. strong oxidising character
- D. association through hydrogen bonding

Answer: D



[Watch Video Solution](#)

16. Acids are obtained as a result of reaction between a Grignard reagent and

A. Oxygen

B. CO_2

C. CH_3COCl

D. CH_3CHO

Answer: B



Watch Video Solution

17. Which acid is weaker than benzoic acid?

A. p-methylbenzoic acid

B. p-chlorobenzoic acid

C. p-nitrobenzoic acid

D. o-chlorobenzoic acid

Answer: A



Watch Video Solution

18. Carboxylic acids are more soluble in

A. ether

B. C_6H_6

C. Na_2CO_3 solution

D. $CHCl_3$

Answer: C



Watch Video Solution

19. Stinges of bees and wasps contain

A. formalin

B. formaldehyde

C. acetic acid

D. formic acid

Answer: D



Watch Video Solution

20. Formic acid is obtained by the hydrolysis of

A. HCN

B. CH_3CN

C. $(COONa)_2$

D. $CO + CO_2$

Answer: A



Watch Video Solution

21. What is the main reason for the fact that carboxylic acids can undergo ionisation?

- A. Absence of α -hydrogen
- B. Resonance stabilisation of the carboxylate ion
- C. High reactivity of α -hydrogen
- D. Hydrogen bonding

Answer: B



Watch Video Solution

22. $RCOOH \rightarrow RCH_2OH$. This mode of reduction of an acid to alcohol can be affected by

A. Zn/HCl

B. Na/Alcohol

C. aluminium isopropoxide and isopropyl alcohol

D. $LiAlH_4$

Answer: D



Watch Video Solution

23. Calcium acetate on heating yields

A. CaO , CO_2 and H_2O

B. $CaCO_3$ and H_2O

C. acetaldehyde and $CaCO_3$

D. $CaCO_3$ and acetone

Answer: D



Watch Video Solution

24. n-butyl benzene on oxidation will give

A. benzyl alcohol

B. butanoic acid

C. benzoic acid

D. benzaldehyde

Answer: C



Watch Video Solution

25. Benzoic acid may be converted into ethyl benzoate by reaction with

A. ethyl chloride

B. dry HCl , C_2H_5OH

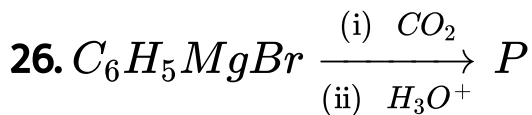
C. ethyl alcohol

D. sodium ethoxide

Answer: B



Watch Video Solution



In the above equation, product 'P' is

A. benzaldehyde

B. benzoic acid

C. phenol

D. benzophenone

Answer: B



Watch Video Solution

27. Which of the following is the strongest acid?

A. Phenyl cyanide

B. Benzoyl chloride

C. Benzyl chloride

D. Methyl benzoate

Answer: C



View Text Solution

28. Which of the following is the strongest acid?

- A. o-nitrobenzoic acid
- B. p-nitrobenzoic acid
- C. p-chlorobenzoic acid
- D. benzoic acid

Answer: A



Watch Video Solution

29. Phenol $\xrightarrow[\text{Dust}]{\text{Zn}}$ X $\xrightarrow[\text{Anhyd. AlCl}_3]{\text{CH}_3\text{Cl}}$ Y $\xrightarrow[\text{KMnO}_4]{\text{Alk.}}$ Z, the product 'Z' is

A. benzaldehyde

B. benzoic acid

C. benzene

D. toluene

Answer: B



Watch Video Solution

30. Which has the highest pK_a value?

- A. Benzoic acid
- B. p-nitrobenzoic acid
- C. m-nitrobenzoic acid
- D. o-nitrobenzoic acid

Answer: A



Watch Video Solution

31. Which of the following compounds will have the smallest pK_a value?

- A. Benzoic acid

B. Formic acid

C. Acetic acid

D. Phenylacetic acid

Answer: B



Watch Video Solution

32. Of the following compounds, the most acidic is

A. p-nitrophenol

B. p-hydroxybenzoic acid

C. o-hydroxybenzoic acid

D. p-toluic acid

Answer: C



Watch Video Solution

**Odisha Bureau S Textbook Solutions B Very Short
Answer Type Questions**

1. Methyl cyanide on hydrolysis yields _____.



Watch Video Solution

2. What happens when acetic acid is treated with sodium carbonate?



[Watch Video Solution](#)

3. How will you prepare acetamide from acetic acid?



[Watch Video Solution](#)

4. Give any two uses of formic acid.



[Watch Video Solution](#)

5. C_6H_5COOH is formed by carbonation of



Watch Video Solution

6. Write the structural formula of 3-Hydroxybutanoic acid



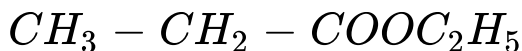
Watch Video Solution

7. Write the IUPAC name of the following compound



Watch Video Solution

8. Write the IUPAC name of the following compounds



Watch Video Solution

9. Write the IUPAC name of the following compounds



Watch Video Solution

10. Write one reaction to distinguish between formic acid and acetic acid. Give equation.

 [Watch Video Solution](#)

11. Benzoyl chloride is formed by the action of PCl_5 on

 [Watch Video Solution](#)

1. Why formic acid reduces Tollen's reagent like aldehydes?

 [Watch Video Solution](#)

2. Explain why formic acid has two different C-O bond lengths i.e. 1.23\AA and 1.36\AA , where in sodium formate two C-O bond are same having bond length 1.27\AA .

 [Watch Video Solution](#)

3. Give two tests to distinguish between formic acid and acetic acid.



[Watch Video Solution](#)

4. How can you convert toluene into m-nitrobenzoic acid?



[Watch Video Solution](#)

5. How formic acid can be converted to acetic acid?



[Watch Video Solution](#)

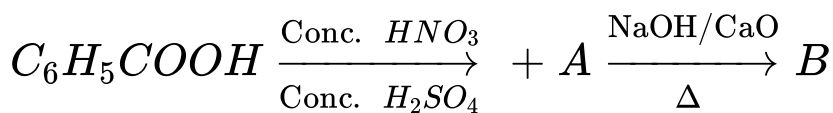
6. What happens when acetic acid is treated with NH_4OH and the product is then heated?

 [Watch Video Solution](#)

7. Why m-nitrobenzoic acid is a stronger acid than benzoic acid?

 [Watch Video Solution](#)

8. Identify A and B





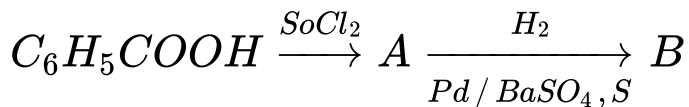
Watch Video Solution

9. What happens when acetamide is boiled with NaOH solution?



Watch Video Solution

10. Identify A and B



Watch Video Solution

11. Distinguish between acetic acid and ethanol?

 [Watch Video Solution](#)

12. Explain why the bond length of C-O in carboxylic acid is slightly larger than that in aldehydes and ketones.

 [Watch Video Solution](#)

13. What happens when sodium propionate is heated with sodalime?

 [Watch Video Solution](#)



Watch Video Solution

14. What happens when acetic acid reacts with ethyl alcohol in presence of conc. H_2SO_4 ?



Watch Video Solution

15. How acetic acid is prepared from methyl cyanide?



Watch Video Solution

16. What happens when sodium acetate is heated with sodalime?



[Watch Video Solution](#)

17. What happens when formic acid reacts with acidified $KMnO_4$ solution?



[Watch Video Solution](#)

18. Explain acetic acid is stronger acid than ethanol.



[Watch Video Solution](#)

19. What is the reaction of acetic acid with lime water?



[Watch Video Solution](#)

20. How can you get acetone from acetic acid?



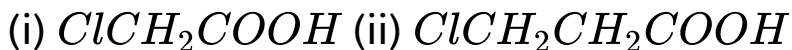
[Watch Video Solution](#)

21. What happens when formic acid reacts with mercuric chloride?



[Watch Video Solution](#)

22. Arrange the following in the increasing order of acidic strength.



Watch Video Solution

23. How can you distinguish acetic acid from acetone?



Watch Video Solution

24. How can you convert acetic acid to methyl amine?



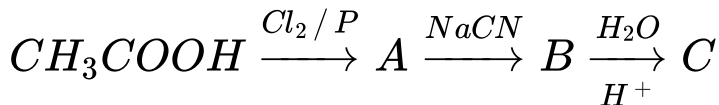
Watch Video Solution

25. Explain the reaction of formic acid with Fehling's solution.



Watch Video Solution

26. Complete the following equation by writing the structures of A, B and C.



Watch Video Solution

27. How can a carboxylic acid be converted to an aldehyde in two steps?



Watch Video Solution

Odisha Bureau S Textbook Solutions D Short Answer Type II Questions

1. Convert methyl iodide to acetic acid.





Watch Video Solution

2. What happens when CH_3COONa is electrolysed? Explain with mechanism.



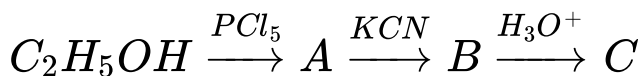
Watch Video Solution

3. Explain benzoic acid is more acidic than aliphatic acids.



Watch Video Solution

4. Identify A, B and C from the following,



[Watch Video Solution](#)

5. Acetic acid is weaker than formic acid, but chloroacetic acid is stronger than formic acid.

Explain.



[Watch Video Solution](#)

6. How will you distinguish between benzoic acid and phenol?

 [Watch Video Solution](#)

7. How do you prepare 2-hydroxypropionic acid from acetaldehyde?

 [Watch Video Solution](#)

8. Complete the equation



 [Watch Video Solution](#)



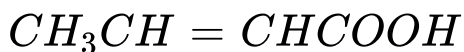
Watch Video Solution

9. Give the IUPAC name of



Watch Video Solution

10. Give the IUPAC name of



Watch Video Solution

11. Give the IUPAC name of



[Watch Video Solution](#)

12. What are the following reagents? Give one use of each reagent.

Tollen's reagent



[Watch Video Solution](#)

13. What are the following reagents? Give one use of each reagent.

Schiff's base



Watch Video Solution

14. What are the following reagents? Give one use of each reagent.

Fehling's solution



Watch Video Solution

15. What is esterification? Explain with mechanism taking the example of benzoic acid.

 [Watch Video Solution](#)

16. CH_3COOH gives HVZ reaction, where as $HCOOH$ does not. Explain.

 [Watch Video Solution](#)

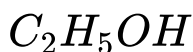
**Odisha Bureau S Textbook Solutions E Long Answer
Type Questions**

1. How formic acid reacts with Tollen's reagent?



[Watch Video Solution](#)

2. Explain with equation how monocarboxylic acid is obtained from alkyl cyanide. How does acetic acid react with the following?



[Watch Video Solution](#)

3. Explain with equation how monocarboxylic acid is obtained from alkyl cyanide. How does acetic acid react with the following?



 [Watch Video Solution](#)

4. Explain with equation how monocarboxylic acid is obtained from alkyl cyanide. How does acetic acid react with the following?

Sodalime

 [Watch Video Solution](#)

5. How do you prepare the following from acetic acid?

Acetaldehyde



[Watch Video Solution](#)

6. How do you prepare the following from acetic acid?

Methyl amine



[Watch Video Solution](#)

7. How do you prepare the following from acetic acid?

Methyl cyanide



[Watch Video Solution](#)

8. How do you prepare the following from acetic acid?

Acetone



[Watch Video Solution](#)

9. Describe any two general methods of preparation of monocarboxylic acid. How does formic acid react with.

Tollen's reagent

 [Watch Video Solution](#)

10. Describe any two general methods of preparation of monocarboxylic acid. How does formic acid react with.

Alcohol

 [Watch Video Solution](#)

11. Describe any two general methods of preparation of monocarboxylic acid. How does formic acid react with.

Sodium

 [Watch Video Solution](#)

12. Discuss any two methods for preparing benzoic acid. How benzoic acid is converted to benzoyl chloride?

 [Watch Video Solution](#)

13. How is acetic acid prepared? Give any two methods. Give its reaction with Cl_2 in the presence of Red P , P_2O_5 and ethyl alcohol in presence of sulphuric acid.



Watch Video Solution

14. Give any one method of preparation of acetic acid. Write its reaction with Chlorine



Watch Video Solution

15. Give any one method of preparation of acetic acid. Write its reaction with

Alkali



Watch Video Solution

16. Give any one method of preparation of acetic acid. Write its reaction with

Phosphorus pentachloride



Watch Video Solution

17. Show the preparation of benzoic acid from toluene

 [Watch Video Solution](#)

18. What is the reaction of formic acid with Ammonia

 [Watch Video Solution](#)

19. Give any two general methods of preparation of monocarboxylic acids. What is the reaction of formic

acid with.

Tollen's reagent?



[Watch Video Solution](#)

20. Compare the acid characters of formic acid and acetic acid.



[Watch Video Solution](#)

21. How acetic acid is prepared by using Grignard's reagent? Give one method of distinguish acetic acid from formic acid. Mention two uses of acetic acid.





[Watch Video Solution](#)

22. Write notes on

Halogenation of benzoic acid



[Watch Video Solution](#)

23. Write notes on

HVZ reaction



[Watch Video Solution](#)

24. Explain why carboxylic acids behave as acids?

Discuss briefly the effect of electron donating and electron withdrawing substituents on the aliphatic carboxylic acids.



Watch Video Solution

Chapter Practice Mcq

1. Which of the following has maximum pK_a value?

A. Picric acid

B. Salicylic acid

C. Anthranilic acid

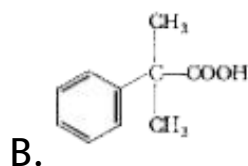
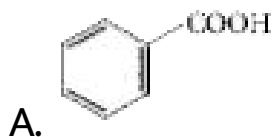
D. Carboic acid

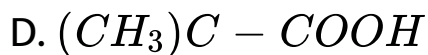
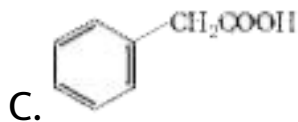
Answer: C

 [Watch Video Solution](#)

2. In which of the following case

Hell-Volhard-Zelinsky reaction can take place?





Answer: C

 [Watch Video Solution](#)

Chapter Practice Very Short Answer Type Questions

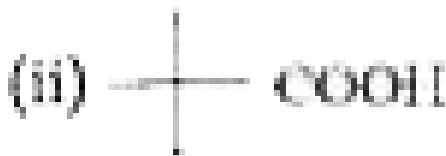
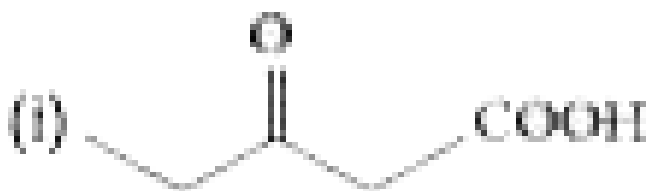
1. pK_a of chloroacetic acid is lower than pK_a of acetic acid. Why?

 [Watch Video Solution](#)

2. Why is C-O bond is shorter in RCOOH than in ROH?

 [Watch Video Solution](#)

3. Write the IUPAC nomenclature of following



(i) .

 [Watch Video Solution](#)

Chapter Practice Short Answer Type I Questions

1. Give the simple chemical tests to distinguish between the following pairs of compounds.

Phenol and benzoic acid



[Watch Video Solution](#)

2. Give the simple chemical tests to distinguish between the following pairs of compounds.

Benzoic acid and ethyl benzoate



[Watch Video Solution](#)

3. How will you bring about the following conversions?

Benzoic acid to benzaldehyde



[Watch Video Solution](#)

4. How will you bring about the following conversions?

Benzoic acid to m-nitro benzyl alcohol



[Watch Video Solution](#)

5. Complete the following reaction and explain the formation of the products.



 [Watch Video Solution](#)

6. Complete the following reaction and explain the formation of the products.



 [Watch Video Solution](#)

7. Why benzoic acid does not undergo Friedel-Craft reaction ?



[Watch Video Solution](#)

Chapter Practice Short Answer Type II Questions

1. Show how each of the following compounds can be converted to benzoic acid?

(i) Benzamide (ii) Propyl benzene

(iii) 2-formylbenzoic acid



[Watch Video Solution](#)

2. Account for the following differences in the acidic character of the following.



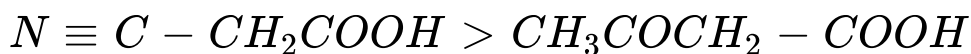
 [Watch Video Solution](#)

3. Account for the following differences in the acidic character of the following.



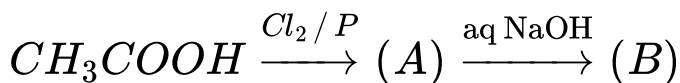
 [Watch Video Solution](#)

4. Account for the following differences in the acidic character of the following.



 [Watch Video Solution](#)

5. Identify the products A and B in the following reactions



 [Watch Video Solution](#)

6. Identify the products A and B in the following reactions



[Watch Video Solution](#)

Chapter Practice Long Answer Type Questions

1. Convert

(a) the benzoic acid to benzaldehyde

(b) the propanone to propane



[Watch Video Solution](#)

2. Arrange the following compounds in the decreasing order of their acidic strength.

(a) CH_3CH_2COOH , $CH_3CH_2CH(F)COOH$,
 $CH_3CH(F)CH_2COOH$, $(CH_3)_2CHCOOH$

(b) 4-nitrobenzoic acid, benzoic acid,

4-methoxybenzoic acid,

3,4-dinitrobenzoic acid



[Watch Video Solution](#)

3. An organic compound (P) having molecular formula $C_9H_{10}O$ form an orange precipitate (Q) with 2,4-DNP reagent. Compound (P) gives a yellow

precipitate (R) when heated in the presence of iodine and NaOH along with a colourless compound (S). (P) neither reduce Tollen's reagent or Fehling's solution nor it decolourises bromine water.

On drastic oxidation of (P) with chromic acid, a carboxylic acid (T) having molecular formula $C_7H_6O_2$ is obtained. Deduce the structures of the compounds (P) to (T).



[Watch Video Solution](#)